

LT-1500 DIGITAL MAGNETIC TAPE LOOP TRANSPORT SYSTEM



NEW

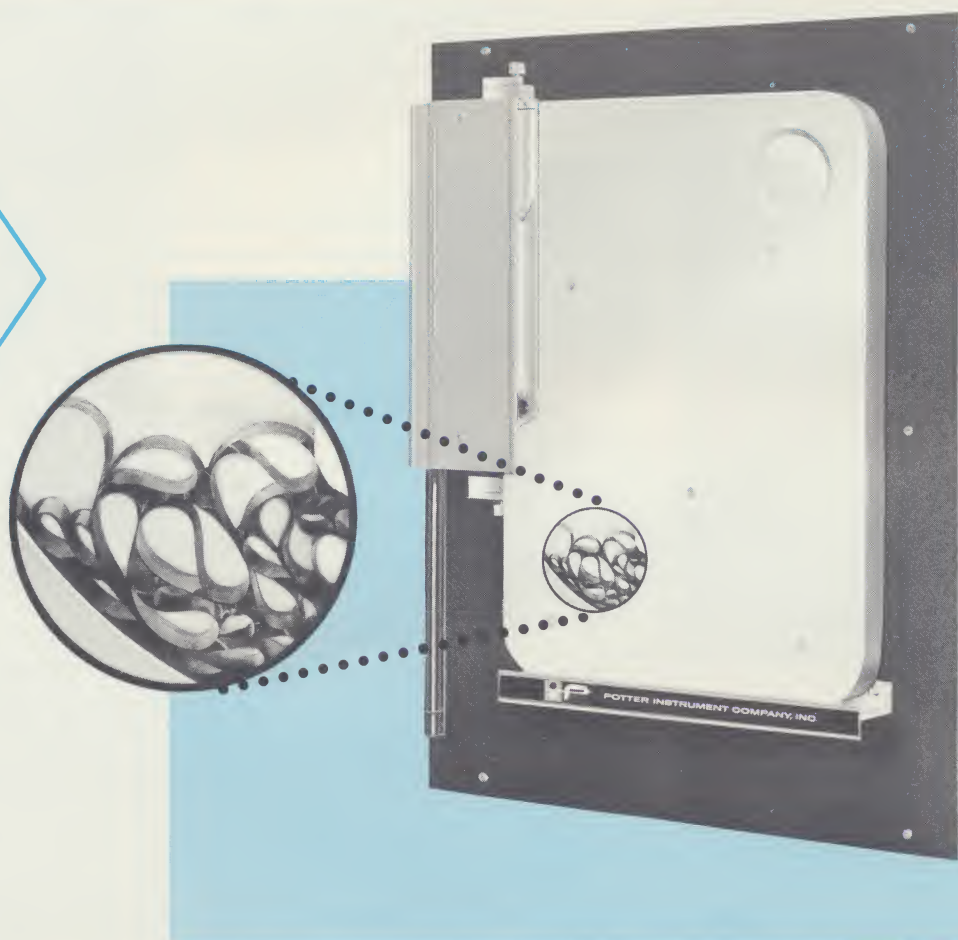


Figure 1 — Potter LT-1500 Magnetic Tape Loop Transport System
With Removable, Interchangeable Tape Loop Cartridge.

FEATURES

- Battery Operation — low power consumption.
- Cartridge Loaded—interchangeable cartridge with up to 240 ft. of tape permits quick and convenient loading.
- Small Size . . . Rugged Construction.
- Selection of tape speed combinations to 120 ips. Standard unit provides six selectable speeds.
- Reliable Data Transfer up to 192 KC. (Density to 800 bpi. Two 8 bit groups with center clocks.)
- Data Storage: 35×10^6 bits with 240 feet of tape (max.)
- Average Access Time:
 - 12 seconds (240 feet at 10 ft. per sec.)
 - 3 seconds (60 feet at 10 ft. per sec.)
- One-inch Tape Width—16 channels permits simultaneous processing of two 7-bit characters.

EFFECTIVE: AUGUST 15, 1966

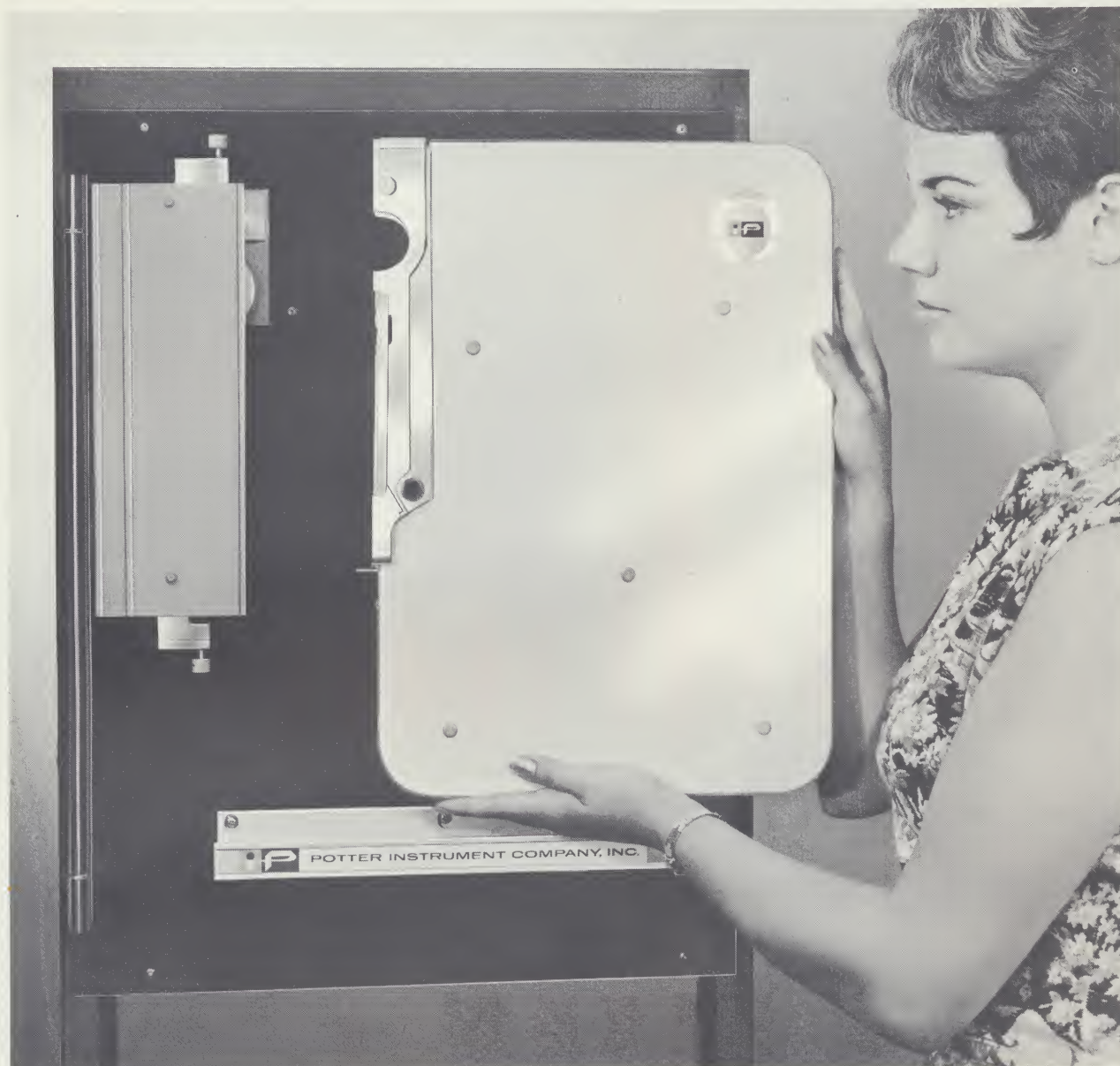


Figure 2 — Interchangeable Cartridges are lightweight (under five pounds), with snap-locks for fast, easy loading.

DESCRIPTION

The Potter LT-1500 Digital Magnetic Tape Loop Transport is a rugged, compact tape handler especially designed for correlation of data and real time analysis in geophysical applications, aircraft, mobile and shipboard recording.

The entire system is packaged to withstand adverse conditions encountered in field seismic exploration operation. The transport operates directly from a 12-volt battery; power consumption is less than 300 watts.

The standard LT-1500 Loop Transport provides up to six selectable tape speeds which are accurately maintained by a single capstan drive system. Any

combination of tape speeds desired is available from 60 to 120 ips.

The Loop Transport features interchangeable cartridge loading modular construction, convenient access to all components for ease of maintenance, and minimum depth behind the front panel for mounting in confined areas.

INTERCHANGEABLE TAPE LOOP CARTRIDGE

A continuous 240-foot magnetic tape loop is stored in a rugged, light-weight interchangeable cartridge. The cartridge is mechanically interchangeable from unit-to-unit. Other cartridges with 60 and 120 feet of tape are also available. The size of each cartridge is the same; independent of stored tape footage.

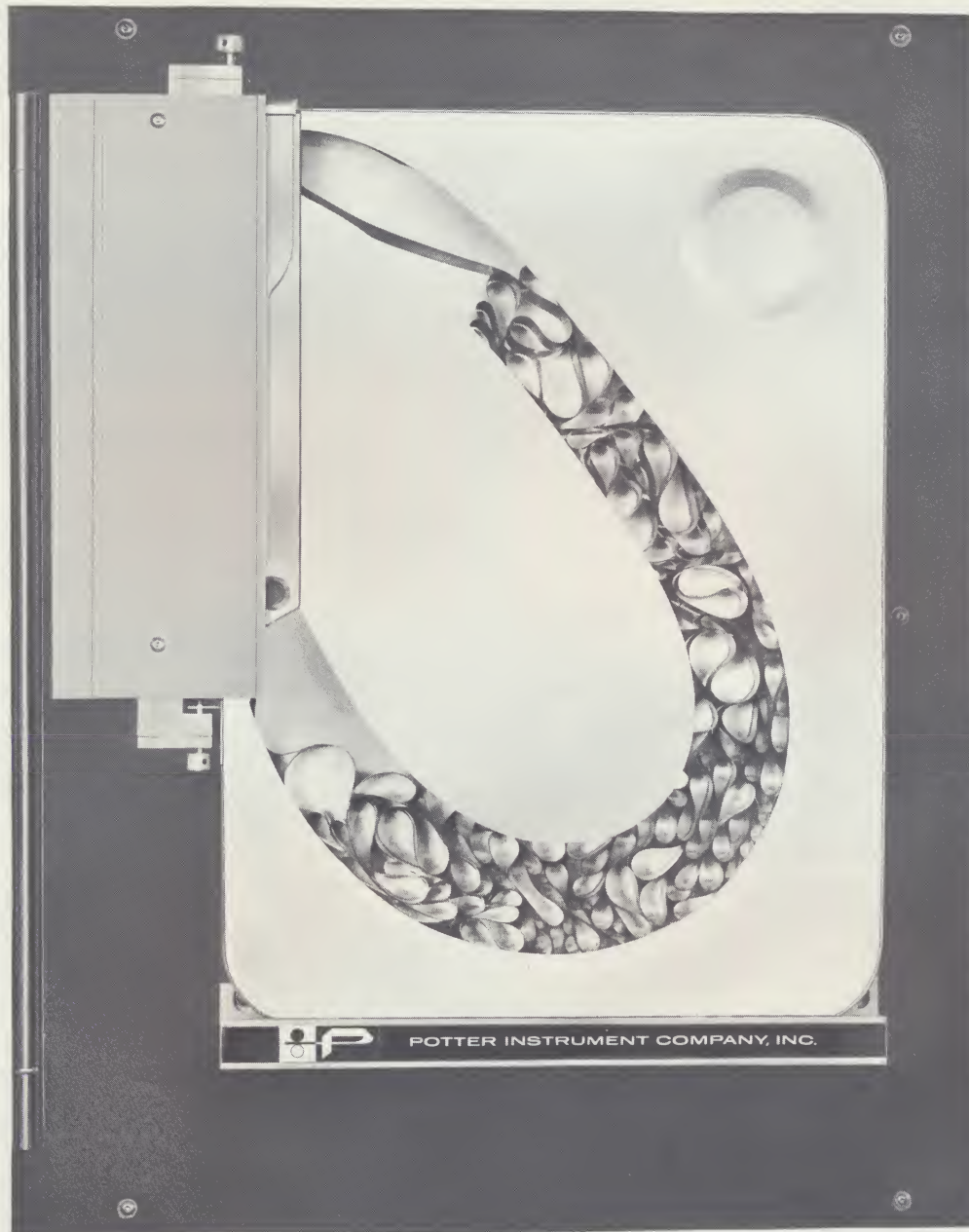


Figure 3 — Open view of continuous tape loop storage.

SINGLE CAPSTAN DRIVE SYSTEM

The tape is driven by a single capstan which maintains positive motion control during tape acceleration and deceleration. Complicated mechanical adjustments are completely eliminated... there are no pinch rollers, guide rollers, air guides or tension arms to restrict tape motion.

Tape drive is achieved by passing the tape 160° around a capstan coated with a resilient material. A vacuum capstan provides tension in the tape for good head-to-tape contact. The tape velocity on the LT-1500 is maintained within $\pm 2\%$ by the capstan servo feedback system. The capstan motor speed is

monitored by a DC tachometer whose output voltage is compared with a regulated voltage from the transport drive electronics. Any voltage differential is fed through the servo feedback system to compensate tape speed variations. The capstan motor and associated tachometer are identical to that supplied on Potter's field-proven FT-151 and FT-152 Field Tape Transports.

An external speed control line permits ± 5 ips variation of nominal selected tape speed. Speed control is linear over the entire 10 ips range. A one volt change results in a 1 ips variation.

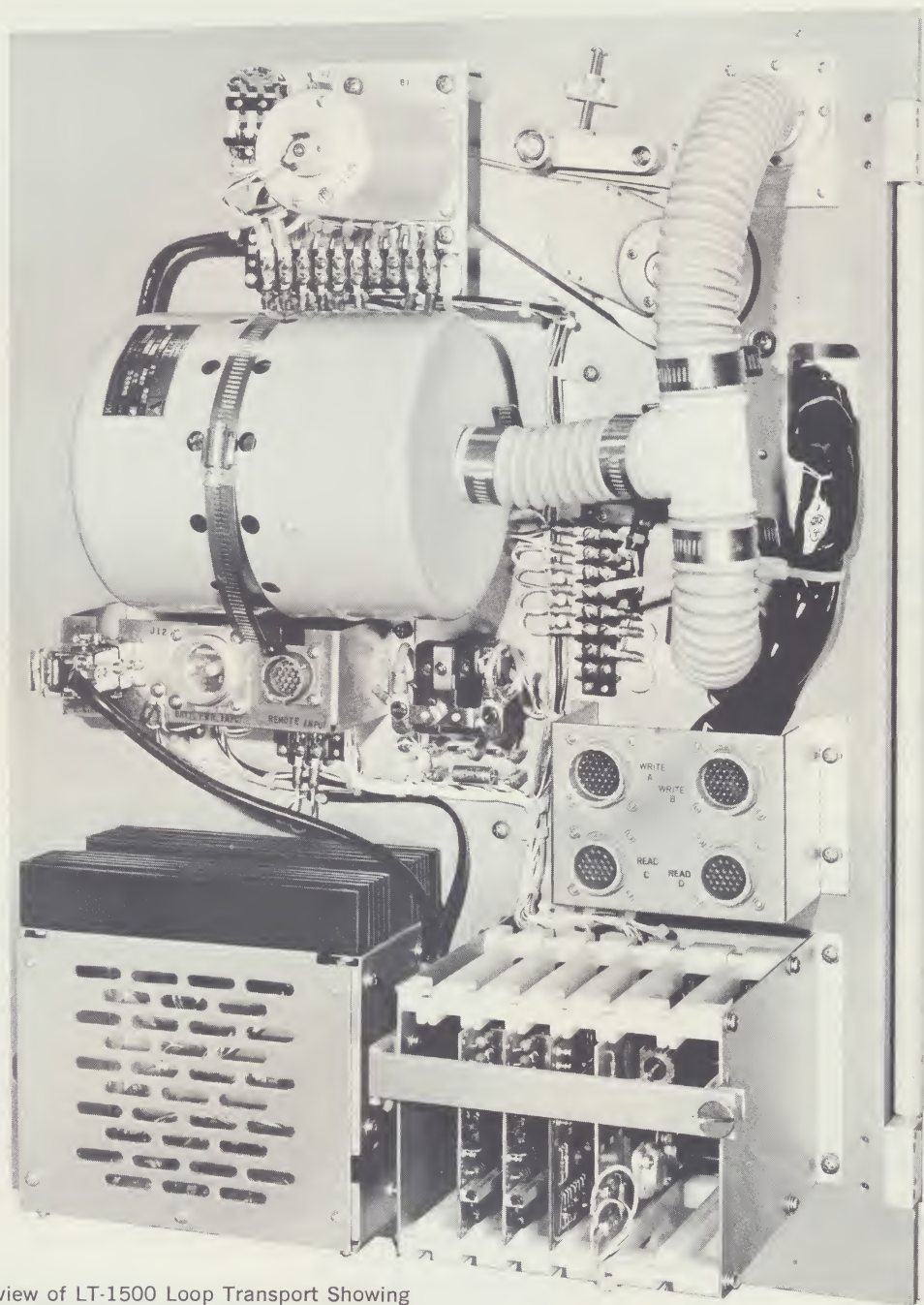


Figure 4 — Rear view of LT-1500 Loop Transport Showing Solid State Drive Electronics and Power Supply.

DRIVE ELECTRONICS AND POWER SUPPLY

Solid state drive circuitry is packaged on printed circuit cards mounted in the back of the transport. A separate power supply provides all voltage required to operate the transport from an input voltage of 12 volts DC. Drive circuitry and power supply are identical to that supplied on Potter's standard "Field Tape" FT-151 and FT-152 Tape Transports.

READ-BEFORE-WRITE HEAD OR WRITE-BEFORE-READ HEAD

The modular, single block, dual gap write/read (or read/write) head assembly is precision fabricated for maximum tape life and minimum interchannel time displacement. Stringent tolerances are maintained on each all-metal head, permitting field replacement without shims or other mechanical adjustments.

Number of channels (typical)... 16 channels, 1" tape.

SPECIFICATIONS

TAPE SPEED (unidirectional)	Up to 6 selectable speeds in range of 60 to 120 ips
PACKING DENSITY	All packing densities to 800 bpi, NRZ I (Two 8-bit groups)
DATA TRANSFER	Up to 192 kilocharacters/sec.
DATA STORAGE	35 x 10 ⁶ bits with 240 ft. of tape (max.)
TAPE WIDTH	1" tape width, cartridge loaded
TAPE TYPE	3M591, 1.0 MIL Mylar™
TAPE LOOP LENGTH	240 feet; 60 feet or 120 feet (please specify)
TYPICAL PERFORMANCE AT 120 IPS	
START TIME (to within $\pm 10\%$ nominal speed)	1 second, maximum
STOP TIME	1 second, maximum
SPEED VARIATIONS (Long Term)	$\pm 2\%$
(Short Term)	$\pm 2\%$
SKEW-STATIC	450/ips (microseconds) per gap (associated with cartridge)
SKEW, DYNAMIC PEAK-TO-PEAK (Instantaneous varying time displacement between any two channels reading all I's tape written of same loop transport)	1000/ips (microseconds)
PROGRAM LIMITATION	Forward (unidirectional) Drive Only

ENVIRONMENTAL CONDITIONS

NON-OPERATING (excluding tape)	-40°F to +170°F
SHOCK	5 g's, 11ms, all 3 axes
VIBRATION	5 - 35 cps, 1/32" single amplitude, 3 axes
OPERATING (with specified tape)	
TEMPERATURE	+32°F to +125°F
HUMIDITY	RH - 20% to 90% to 100°F (no condensation or frost) RH - 20% to 80% to 125°F
POWER	
OPERATING (peak during start-up time) (250 ms)	10.5-14V DC, 600 watts, max. @ 12.5 VDC
OPERATING (steady running at 120 ips)	10.5-14V DC, 300 watts, max. @ 12.5 VDC
INPUT/OUTPUT LOGIC	
INPUT LINES	Power on (switch contact closure required) Run Speed 1, Speed 2, Speed 3, Speed 4, Speed 5, Speed 6.
LOGIC LEVELS	Logic "1" - 0V \pm 0.5V Logic "0" - +5V \pm 1V
REPLY LINES	Power Broken Tape Interlocks Beginning of Loop:
LOGIC LEVELS	Logic "0" = 0V \pm 0.5V Logic "1" = +5V \pm 1V
RELIABILITY	
TAPE PASSES	During operation the tape loop can be cycled a minimum of 1500 times before replacement of tape in the cartridge.
TRANSIENT ERROR RATE	The maximum permissible bit error rate will be 1 error burst in 10 ⁶ bits read.
SIZE & WEIGHT TRANSPORT	
DIMENSIONS	24½" H 19" W x 8" D, maximum behind panel, 3¼" max. in front of mounting surface.
WEIGHT INCLUDING CARTRIDGE	95 lbs. maximum
CARTRIDGE	
SIZE	18½" H x 14½" W x 2" D max. dimensions
WEIGHT	7½ lbs. max.

About **POTTER**

POTTER WORLDWIDE FIELD SERVICE AND LOGISTICS PROGRAM — Repair centers in strategic locations within the continental United States and abroad have been established to support the entire Potter product line.

Staffed by highly-trained field representatives, these repair centers are equipped to effect on-site installation of equipments and to perform quality repair, maintenance and overhaul.

Supplementing this capability, if a customer prefers to provide his own equipment support, Potter has established standard instruction courses to train customer personnel, either at Potter or in the field.

A Spare Parts Department, backed up by an extremely large inventory and streamlined order processing, is available for customer convenience and economy. This inventory permits the customer to realize virtual elimination of downtime as well as savings on spare parts dollars by offering expeditious delivery for replaceable parts. Delivery is available in 24 hours to meet customer emergency requirements—within 72 hours for standard parts under normal conditions. Potter also offers provisioning and logistics capabilities to meet all existing military specifications.

The Potter field service and logistics program is one of the finest in the EDP equipment industry. With reliable, quality-engineered equipment, supported by comprehensive field service, Potter guarantees satisfaction.



POTTER PLANTS — Tape transport production is carried on in this modern 62,000 sq. ft. plant on Sunnyside Boulevard, Plainview, New York. Building also houses corporate offices, sales, engineering and research groups.

East Bethpage Road plant (below), completed in 1963, produces high-speed printers. A third plant in Luquillo, Puerto Rico, manufactures magnetic and photoelectric recording and playback heads. Total manufacturing space in all Potter plants exceeds 110,000 sq. ft.

Present Potter employment is in excess of 650 people.



SALES OFFICES

POTTER INSTRUMENT COMPANY, INC.

NORTHEAST DISTRICT

151 Sunnyside Boulevard
Plainview, Long Island, New York 11803
Telephone: (516) 681-3200
TWX: 510-221-1852
CABLE: PICO

3 Erie Drive
Natick, Massachusetts 01760
Telephone: (617) 235-4727

11499 Waterview Cluster
Reston, Virginia 22070
Telephone: (202) 737-1174

MINNESOTA DISTRICT

4940 Viking Drive
Minneapolis, Minnesota 55424
Telephone: (612) 920-4973
TWX: 910-576-2947

SOUTHWEST DISTRICT

715 East Mission Drive
San Gabriel, California 91776
Telephone: (213) 283-8177
TWX: 910-589-3372

POTTER INSTRUMENT COMPANY, LTD.

INTERNATIONAL SALES AND SERVICES

McGraw-Hill House
Shoppenhangers Road
Maidenhead, Berkshire, England
Telephone: MAidenhead 20361
CABLE: PICO MAIDENHEAD

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POTTER INSTRUMENT COMPANY, INC.

151 SUNNYSIDE BOULEVARD • PLAINVIEW, NEW YORK • 516 OVERBROOK 1-3200